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\* MA – TACF Annual Meeting – Morning Business Meeting 11/22/08 10:20am

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Board Members Present: Kathy Desjardin, Yvonne Federowicz, Charlotte Zampini, Rufin Van Bossuyt, Brad Smith, Jamie Donalds, Mike Novack, Guy Shepard, Denis Melican, Lois Breault-Melican

Others present: Paul Sisco, Kendra Gurney

(Other Board Members arrived somewhat later)

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\* Modifications to Bylaws & Elections

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\* Four items to be voted on (Motions)

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1. Amendment to Bylaws: “Board votes to amend 4.2 of Bylaws by adding the following phrase to the last sentence, 'provided that the Board for good cause may suspend the term limits for specific board members.' ”

2. Suspend term limits for the re-election of the following Board members : Richard Hoffman, Gary Jacob, Mike Meixsell, Brad Smith

3. Vote to expand board size by 1 to 20

4. Vote on Slate of Director positions that are expiring as of 1/1/2009 as well as officers.

Term limits became an issue this year: several of our Board members would have been beyond the original limit.

\*\*\* RESULTS \*\*\*

Motion #1:

Rufin proposed motion #1, Brad seconded

Passed unanimously

Motion #2: Suspending term limits for all on the list who

Motion: Charlotte, Seconded Yvonne

Passed unanimously

Motion #3: Board increased by 1 to size of 20

Brad motioned, Mike seconded

(4) Elections – unanimously re-elected all on the ballot.

BALLOT:

Ballot for MATACF Board of Directors and Officers - includes all current nominations and potential re-elections

Eight current Directors have terms ending 12/31/2008:

Jamie Donalds  
Richard Hoffman  
Gary Jacob  
Mike Meixsell  
Guy Shepard  
Brad Smith  
Bruce Spencer

Two New Potential Directors have been Nominated:

John Meiklejohn  
Brian Clark

Officers up for re-election:

Jamie Donalds – President  
Yvonne Federowicz – Vice President  
Kathy Desjardin – Secretary  
Mike Novack – Treasurer

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Board Members NOT up for re-election this year - terms expiring 12/31/2009 (several will have term limit issue at that time):

Lois Breault-Melican  
Kathy Desjardin  
John Emery  
Yvonne Federowicz  
James Garland  
Frank Howard  
Denis Melican  
John Mirick  
Michael Novack  
Rufin Van Bossuyt  
Charlotte Zampini

Yvonne announced South Kingstown Land Trust & Master Gardeners new orchard.

business meeting adjourned 11:40

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\* Annual Meeting - Afternoon

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Additional Board Members present: Frank Howard, Gary Jacobs, Bruce Spencer, Rich Hoffman, Mike Meixsell

Many new people – Kathy has list

25th National Meeting Summary

Nut distribution: 1000 BC3F3 nuts from Meadowview – going to senior members first  
5 nuts or 2 seedlings for \$25

CT Board Meeting: wondered who had joined early enough

National office is moving from VT to Ashville; Ashville NC US Forest Service Building

Chinese chestnut trees: timber type trees that resist the blight

China has 3 spp; they saw *seguinii* and *henryii* – these were large, forest-type – not shrubs at all; bigger than *Mollissima* which were more orchard-type

*Castanea henryii* is more adapted to southern China

Sarah has found that specific combination of trees important for F1s

Chapter Legacy Tree: why don't we sponsor one as a chapter? Needs \$10K; we already have \$1700 committed – can talk about now and in January

Kendra – the \$10K might be flexible

National membership is at over 5900 people

We have 48 F1s at U. TN. - 95% germination rate  
(another cross had 0)

Chapter liability insurance: National insurance policy covers the chapter board members, possibly our chapter activities

TN is only paying \$400/year - we can talk about that in January

Paul Sisco has resigned as SASC but has been voted on as a member of the national board

Rufin: National meeting was focused on celebrating 25 yrs of TACF

U.S. mining reclamation – Office of Surface Mining (mountaintop removal) – law was passed in 70s that recontouring required; however trees wouldn't grow well – compacted

Chestnuts being planted – advanced hybrids – growing about 2x as fast as oaks in same areas

Toured Ashland farms near Chattanooga; chefs created feast; Dollywood has chestnut plantation (Dolly Pardons)

Phil Rudders from MN – first president of TACF

Two days of Board meetings

Upton, MA remembrance of chestnuts in 25th national program. Karl. Had joined foundation.

“I am 95 yrs old and I can remember picking up native chestnuts... I can remember filing my pockets with the nuts on the way to school... teacher caught me... (teacher took his chestnuts!)..”. railroad ties cut from blighted chestnut; made planks for bridges, horse stalls, etc.

Marshal Case is retiring but is staying on part-time as search extending. Narrowed down now.

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\* Charlotte Zampini: Pollination and Orchards Report

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Pollinations 2008

Quabbin 32 nuts

Exeter 108 nuts

Smithfield 18 nuts

Sudbury 74 nuts

New Orchards

Dartmouth, MA

Glocester, RI

Additions

Stockbridge

Westerly

Lancaster

Number of lines:

19 “good” Clapper lines, plus 8 additional smaller lines; can add additional genetic variation

21 good Graves lines, 5 additional small lines

1 Nanking line in ground and seeds for another small line

For 2009 need at least one more Nanking line, and to plan additional lines for new orchards (esp. RI)

Not all orchards are doing well.

Charlotte wants to organize teams to go through orchards and work on existing

Additional lines from new Chinese: Upton Chinese is in a few orchards as F1s.

Pruning, putting fertilizer pellets in, weeding, putting irrigation in

Inoculations

Wrentham MA done on June 19th, 2008 on its largest line

Team of 4 people optimal

about 3 orchards need to be inoculated next year

Test Plantings

Quabbin, MA – Bruce Spencer

re-introducing in forested areas

Bruce & Rufin put in 142 nuts in areas that had been harvested. Had dramatically different results.

Used different shelters. Success was 80% in lowest locations near pine trees and with soil moisture.

Up on hill with east slope – 30%. South facing 8% - even higher up. Had a wet summer too. On dry southern slope had 0 germination at top. Sprouts all over place but moisture critical for nuts.

Paul Sisco asked if we used planting mix – answer no.

Kendra: soil compaction? Bruce – no – slash left

Bruce: seedlings – had very good results – had good root systems, all planted on lower slopes.

Hasn't checked one other spot.

Bridge grafting possible according to ? - Charlotte -

Agrifos & Pentrabark – being tried in south – Kendra would like to attempt using this potassium phosphite

Could help keep mother trees going

Not extremely expensive - \$75 for enough for a couple of large trees

[www.treehelp.com](http://www.treehelp.com) agrifos

Joe James in south working on Ink disease resistance - “root rot” - looking for lines with natural resistance

We have 3 or 4 in our orchards that are highly resistance

Jamie has a cross that is ink-resistant, will send nuts to Joe – needs F2s

Paul – looks like F2s have higher resistance to ink, works somewhat like blight resistance

50 or 100 nuts spread across a couple of lines.

Jamie: Grass near trees really slowing growth – even with older trees slows everything down.

John Emery's orchards have excellent growth— lots of weeds – not grass – John Meiklejohn plowed before starting his and doing very well

Riverbend: in a state park, very visible – did a night planting, 25 or 50 seedlings went in

LUNCH

Tower Hill BC3 Orchard History

MA-TACF's first “official” orchard

New Orchard 2001 Internet was dialup,  
John Trexler has been very supportive  
Rufin, Tim, Anne, Cormiers had done work  
Brad agreed to be manager

Rototilled the rows with a large commercial machine  
Limited space – 4' spacing between trees, 12' between rows

Had a difficult time planting, wore people out

No weed-free planting mix, grass grew up in everything

After this, 3 people could plant more than 20 did in less than half the time

bamboo, bluex

Tower Hill – also did watering  
Put up nice signs, interpretive signage

Kelley Americans were part of Tower Hill Plantings  
Some died, some thrived '  
year 1 – best were 12-18 in tall

Trees in tubes were very spindly, learned that tubes needed to come off 2nd year. Tower Hill has very light deer pressure.

Insufficient F1s, Fred sent some up from Meadowview.

After 2 years realized that south end of orchard had poor growth, so stopped trying to grow there.  
Construction vehicles had been parked in bad area. Compacted.

First 3 years need lots of watering unless rainy

2004 orchard stabilized about 80 trees of 144 original.

Then natural blight started setting in. Mysterious mutated leaves on F1s.

Deer seemed to love horse chestnut more than chestnut...

2006 natural blight started coming in

By year 7 inoculated

Inoculation help needed!

Some trees look ok for a bit, then cankers got drastically worse in fall

ep155 very harsh on chestnuts,, took into November to look extremely bad

Future of TH: demonstration orchard; The Nuttery

Pruning seemed to have no ill effects

Visibility raises interest but didn't appear to increase membership drastically

Do not replant in a "bad hole"

Orchard managers should be psychologically prepared to see all of their bc3 trees die

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\* Kendra's Report

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Seed Orchards

MA-TACF will be trying to get this going soon

Kendra – NH native

Worked on chestnut restoration for her MS thesis, did cold tolerance research, controlled pollinations

Is now the New England Science Coordinator

Science Coordinator provides scientific support to chapters, link between chapters and national

Major areas: breeding orchards, pollinations, inoculations, selections, seed orchards, data management, events coordination

UVM providing office space

MA/RI strengths:

pollinations

breeding orchards

sample ID

events coordination

MA/RI foreign territory

inoculation  
seed orchards  
etc

#### Inoculation:

Must be at least 1.5" diameter  
larger is better, room for duplicated inoculation points  
often variability in size due to material availability and replanting  
Helpful if controls are large enough to be included

#### Severity of Blight:

Likely see natural blight occurrence before inoculation time  
Blight infection may slow growth of trees  
Blight cankers may limit possibly inoculation points

#### Case-by-case decisions

Clear answers?

Unfortunately, not really

Best to take on case-by-case basis  
decision may require a field visit

Options include:

Inoculate when trees are smaller with only two points

Inoculate weak trees with weak fungus only

?

#### Example from PA

Orchard with very bad natural blight

Growth further inhibited by deer browse

Decision to inoculate put off until trees reached appropriate size

Could only inoculate with weak strain, as basal cankers left no place for stronger strain

Saving grace: same line planted elsewhere and selections taken from different location

Trees that are struggling anyway will have a difficult time fighting blight

#### Canker Ratings

Look at EP155 and SG cankers on all trees

Rate based on size of each canker as a composite score

Of those showing acceptable resistance, also rate Americanness

Select best

Remove others

Paul Sisco – if trees aren't blooming yet might as well wait

Since these will be pollen parents; if inoculate will slow down path to blooming

Not quite getting 1/8 because of Americanness

Slide of canker size rating scheme  
strong and weak blight cankers both small in best trees

Takes a while for cankers to develop

Time of flowering important- late flowering but depends on soil

Seed Orchards

What you need:

1 acre per block, each block made up of about 20 plots

150 trees/plot, 3000 trees per block

Final density ~20 trees/block

Orchard should remain for ~25-30 years

Agreement or management plan between cooperator and chapter may be appropriate

These get selected at about 1" diameters at base, but methods are still under review

Each plot is offspring of one line

Fred has 9 blocks, thinks might get 2 good in 1 block and none in another

Need final density good for cross-pollination

Time frame longer than breeding orchard

Lines won't all be ready at same time so will need long-term

Timing shouldn't be as much of an issue in terms of the blight killing these final trees, they should be able to survive for quite a while

Conflicting opinions on how strong an agreement to get

State MOUs may be ok if visible spot

Private land more risky

Might consider buying chapter land

Easements

No national agreement template yet but we might want to draft something about that

9 blocks total

at least one cooperator with 4-5 acres

experience and/or infrastructure key

may split rest into smaller orchards

one volunteer can handle a 1-block orchard

similar work load to breeding orchard

Must have COMMITTED orchard manager

Irrigation system gets in way

Recommendation is to water from a tank when necessary, having a pump even better

Going from 3000 trees to 20, irrigation systems difficult to work with  
Are our soils so different that our trees need more than Meadowview?  
Kendra says NH doing ok

Possible collaborators:  
DCR seems good start  
Possibilities with NRCS in RI  
May also try USFS, TNC, Universities, Forestry Societies, Land Trusts  
May be old USFS seed orchards in MA, does anyone know more about this? Rex Mann (KY)  
(not chestnut) – could ask Rex

Search for grants – having partners helps

National has an MOU with Forest Service

Adding collaborators always helps getting grants

Bruce says there is a state seed orchard in Sterling, MA

No federal land in MA though

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\* Paul Sisco – Keynote Talk  
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Paul went to Princeton and majored in European History but did biochemistry too  
evolution was against law to be mentioned in TN - his teacher did anyway

Was professor at NC State

Charlie Burnham got Paul involved

Paul was first regional coordinator

No formulas – need to know what kind of soil -

Love nitrogen – acid-loving

Deer – use 4-foot wire fences around each – big – 100in circumference  
also get buck rub

\$4-5 /cage put on with releasable cable ties, easy to put on and off; cuts a hole in bottom of each cage  
Some fence entire orchard

Their one orchard has had almost all “good”-look after inoculated, but after a couple more years differences have emerged

Unraveling the Mysteries of chestnut DNA

Genes for Blight Resistance – where, how many, do some Americans have different ones

Barriers to Recombination

Differences between Chinese and American chromosomes

Percent Chinese remaining in our releases

Parentage – can determine using genetic markers

Genetic Diversity

Genetic fingerprinting

Holy Grail: identify and clone genes for resistance

Europeans have 12 linkage groups on their chromosomes

Paul was uncertain about B-E-F as sites for resistance genes

Tried to line up markers from sativa and oak with dentata

Couldn't match one of them though

Barriers to combination: Inversions and translocations

Inversion: area in 1 chromosome flips

Reciprocal translocation – piece of 1 chromosome pasted onto other and vice versa

In 2006 Reciprocal translocation tested – Paul had data indicating but couldn't prove

Meiosis in Chinese-American crossing – get crossing pattern

Visible in microscope photo Paul's associate took in actual meiosis

a lot of meiotic products don't work

Does it involve B & E that have resistance factors

They are hoping that the resistance factors have both passed into same offspring

E and B are on different chromosomes according to their probe results, using probes developed using related (oak and sativa)

Fagaceae Project  
Beech, *Mollissima*, *dentata*

Making cDNA libraries

Ethylene gene much higher in Chinese chestnut when blighted

Oxidase gene neutralizes acids that blight produces

Compare resistant BC3 to susceptible one and determine how they differ

Compare different resistant BC3s and see what common Chinese is left in all on each Chromosome

Want to insert segment into a particular tree seed and see if it confers resistance is best proof

Seed orchards – don't want Chinese trees nearby

More genetic variability in southern U.S. due to ice age

A new sequencer available to National at Meadowview

If can screen seed orchard choices, could nail resistance and Americanness

Paul has 2 articles in JTACF in 2006 – related

The website is: [Familytreedna.com](http://Familytreedna.com)

mitochondrial dna also

The 7 daughters of Eve good book for women to read  
3:47 ended for orchard tour